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Determinants of Banking Institutions and Private Sector-Led Economy Growth in Nigeria (1989 - 2013): A Causality Approach

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Abstract

The study evaluates the relationship between determinants of banking institutions and private sector-led economy growth in Nigeria for the period (1989-2013). Secondary data was collected from the CBN statistical bulletin and national bureau of statistics. Hypotheses were formulated and tested using time series econometrics. The test for stationarity proves that the variables are integrated in the order 1(1).There is also a long-run equilibrium relationship between banking institutions and private sector-led economy growth and the result also confirms about 92% short-run adjustment speed from long-run disequilibrium. There is no causality between private sector-led economy growths and banking institutions, but growth rate of manufacturing sector and growth rate of industrial sector granger causes each other. The coefficient of determination indicates that about 84% of the variations in banking institutions are explained by changes in private sector-led economy growth variables in Nigeria. The study recommends that the financial institutions should maintain a high degree of integrity and honesty in their dealing and this will bring trust and good relationship between the operators and the beneficiaries. An effective training programs should be mounted for the private sector growth this will educate and improve investors on existing business opportunities.

Keywords: *determinants, banking, institution, private sector, growth, causality approach.*

1. Introduction

Okereke (2005) posits that the rate of economic growth and development of a nation depends on the effective performance of its financial system therefore; banking institutions are expected to play a critical role in the development of the private sector-led economy in Nigeria. Because a vibrant private sector-led economy remains the engine-room of economic growth and development for any market free economy (Nwakoby, 2004). Lemon (2002) stressed that, a well co-ordinated, strong and vibrant private sector-led economy enhance productivity would ensure transfer of sound industrial technologies that will brings about good competitive markets and improved general welfare of the citizenry. Nigeria like most African countries at independent relied heavily on public sector-led economy (Olusola, 2001). According to Andabai (2010) presently, these arrangements are gradually changing with government embracing privatization of its public enterprises and emphasis is now being laid on private sector-led economy that will move the new economic programme of government forward. Unfortunately in Nigeria, the private sector-led economy has not developed much when compared with its counterpart in some developing counties in East Asia, which Nigeria was ranked ahead of in the 1960's in terms of economic growth potentials (Egbou, 2008). Incidentally, the performances of private sector-led economy in Nigeria for the past years had not reflected positively on the economy in terms of economic growth and development despite

the remarkable increase in the number of banking institutions in Nigeria.

Andabai (2011) also reaffirmed that, this is because; private sector-led economy had not been effectively stimulated by the banking institutions in terms of medium and long-term credit facilities and therefore, that is the reason banking institutions are expected to play their major role of financial intermediation for the growth and development of the private sector-led economy in Nigeria. Consequently, the major concern of this study is specifically to search for greater efficiency and the complementary roles to be played by deposit money bank through effective and efficient financial and managerial intermediation in order to achieve a sound private sector-led economy in Nigeria. The theoretical framework underlying this research is premised on the 'Big Push" theory. This theory was established in 1961, in Latin America, by Professor Paul N. Rosenstein-Rodian. The theory stated that, "Big Push' or large comprehensive programme is needed in the form of high minimum amount of investment to achieve economic growth and development in an economy (Jhingan, 2007). Banks, especially deposit Money Banks (DMBs) try to intermediate funds between the surplus and the deficit economic units in the economy especially at the retail segment of the market. The private sector-led economy provides useful private initiative for poverty reduction creating productive jobs to achieve high level of potentials in the economy (Nnanna, 2003).

According to Nwakoby (2004) the private sector-led economy is made up of the followings: agricultural sector: The agricultural sector in Nigeria is basically a mixed system of subsistence and modern farming. Federal office of Statistics (FOS) estimate shows that the subsistence agricultural system accounts for 90% of agricultural output while the modern farm sector accounts for the rest (CBN, 2008). In general, traditional farming is characterized by (i) production for subsistence; (ii) extensive use of land and practice of shifting cultivation, and (iii) land tenure system, which grants rights of access to each family (both nuclear and extended). The system results in land fragmentation, use of crude implements such as hoes and cutlasses, which makes it backward. Consequently, importation of expensive raw materials becomes the alternative. This increase the running costs of these firms and reduces their competitiveness.

Manufacturing sector: The manufacturing sector has failed to meet the expectations of the Nigerian society in terms of its contributions to the Gross Domestic Product and of providing overall gainful employment expected from the private sector-driven economy (Nnanna, 2003). Rather than being a leading growth sector and a key factor in socio-economic transformation, the sector has remained a major consumer of foreign exchange, with a high level of dependency on imported raw material and capital goods, and making relatively minor contributions of foreign exchange earnings.

Industrial Sector: The register of establishment compiled by the Federal Office of Statistics (FOS) in 2005, defines an industrial establishments as "an economic unit, under a single ownership, which engages in one or predominately one kind of economic activity at a single location". Based on the above definition, the size of Nigeria's industrial sector was put to 61.289 establishments each employing more than five workers. Lemo (2002) posits that, the problems of banking institutions that often militate against their achievement a desired target in financing private sector may be internal and sometimes beyond the banking institutions themselves especially when they fall in the realm of public sector. These problems according to Nwakoby, (2004) includes: (i) low operating capital (ii) inadequate highly skilled and experience personnel (iii) high cost of doing business in Nigeria (iv) publication instability and poor governance (v) consumer purchasing power in Nigeria is low (vi) accounting illiteracy and poor book keeping (vii) Poverty. Besides performing the usual retail banking functions, banks in developing countries play an effective role in their economic growth and development and the majority of people in such countries are poor, unemployed and engaged in traditional agriculture. There is acute shortage of capital. People lack initiative and enterprise. Means of transport are undeveloped. The DMBs help in overcoming these obstacles and promoting economic development. The role of DMBs in a developing country (Nigeria) as discussed by Andabai (2010) include the followings: (i) mobilizing savings for capital formation (ii) financing Industry (iii) financing Trade (iv) financing agriculture (v) financing consumer activities (vi) financing employment generating activities (vii) help in monetary policy.

2. Methodology

Secondary data was collected from national bureau of statistics and CBN statistical bulletin and the study also considered using annual data, because quarterly data may not be accessed for some of the variables. The study proxy banking institutions to aggregate private sector credits as the depended variable while growth rate of manufacturing sector, growth rate of agriculture sector, growth rate of industrial sector were also employed as the independent variables to measure private sector-led economy growth as indicated in (appendix I).

3. Model Specification

The study based on the null hypotheses that, there is no long-run relationship between private sector-led economy growth and banking institutions in Nigeria and to ascertain whether unit roots exist among the variables. The study also adopted Juselius (1990) and Johnsen's (1991) multivariate co-integration procedure and the co-integration test is also based on Vector Error Correction Model (VECM): $\Delta Y_t = \delta o + \Sigma \delta_i \square \Delta Y_{t-1} + \cdot \beta Y_{t-p} + \mu_t \ldots$ (i)

Where, Δ is the first difference operator, Yt represents (GRM_t, GRA_t, GRI_t) δo represents the intercept, and μ represents the vector of white noise process. The matrix β consists of r ($r \leq 1$) co-integrating vectors. Matrix · contains the error parameters and the Johansen and Juselius co-integration procedure yields two statistics (i.e. maximum eigenvalue and the trace statistics). The study estimates the following VECM to determine the long and short-run dynamics between private sector-led economy growth and banking institutions in Nigeria.

a b

$\Delta APC_t = \cdot + {}_{i=1}\Sigma \cdot_i \Delta GRI_{t-1} + \Sigma \cdot_i GRM_{t-1} + \Sigma \cdot_i GRA_{t-1} + \cdot R_{t-1} \ldots$ (ii)

Where Δ stands for difference operator; represent private sector-led economy growth and banking institutions variables represent (GRM, GRA, GRI), the error correction term assesses the deviations of the variables from the long-run equilibrium association.

4. Estimation Technique

Estimating the VECM proceeds in the following manner, pre-test for stationary, lag-length, and test for co-integration and this is to ensure that the variables are stationary and that shocks are only temporary and will dissipate and revert to their long-run mean. The test for stationary or unit roots employed for this study was the Augmented Dickey-Fuller (ADF) test which was performed on the variables at levels and first differences. Co-integration requires that all the variables be integrated of the same order and to test for unit roots, we used the ADF to test the null hypothesis of H o: y□=0 in

$$\Delta yt = \beta_o + \beta_{2t} + \delta y_{t-1} + \sum_{t=1}^{b} \alpha, \Delta y_{t-1} + \varepsilon_t \quad \ldots\ldots\ldots\ldots\ldots\ldots \text{(iii)}$$

To examine whether a unit root exist the ADF test assumes the asymptotic normality of the idiosyncratic error term, ε_t, in (3). The choice of lag-length may be decided using Sims likelihood ratio test and the appropriate lag length is important as too many lags reduce the power of the test due to the estimate of additional parameters and a loss of degrees of freedom. In contrast, too few lags may not capture the dynamics of the actual error correction process, resulting in poor estimates of growth and its standard errors.

5. Data Analysis and Results

Table 1: Unit Root Tests Analyses

The ADF Unit Root test for Stationarity							
Variables		(with constant, no trend)		With Constant and Trend		Order of Integration	Decision
		At Level	First Difference	At Level	First Difference		
APC		*-5.628645	**-12.93363	*-6.445268	**-12.69410	1(1)	Stationary
GRM		-2.348643	**-8.643673	-3.040087	**-8.918420	1(1)	Stationary
GRA		-2.050497	**-8.181111	-2.615188	**-8.413005	1(1)	Stationary
GRI		-2.408317	**-5.820733	-1.772470	**-6.168194	1(1)	Stationary
Critical values	**1%**	**-3.6228**	**-3.6289**	**-4.2324**	**-4.2412**		
	5%	**-2.9446**	**-2.9472**	**-3.5386**	**-3.5426**		
	10%	**-2.6105**	**-2.6118**	**-3.2009**	**-3.2032**		

Notes: (1)*1% level of significance, **5% level of significance, ***10% level of significance. (2) The tests accepted at 5% level of significance. (3) Decision rule -The critical value should be larger than the test statistical value for unit root to exist

Source: E-views Econometrics 5.0

The tests for stationary of the variables were done using the Augmented Dicker Fuller (ADF) Unit Root Test. The results in table 1 show that all the variables are integrated of order one, that means unit roots exist among the variables i.e. 1(1) at the 5% or 1% level of significance. Hence, we can go ahead to test for co-integration in the equation.

6. Test for Co-integration

The concept of co-integration implies that if there is long-run relationship between two or more stationary variables, deviations from this long-run path are stationary (Ibenta, 2012). Therefore, the basic idea behind co-integration is that if, in the long-run, two or more variables move closely together, even though the variables themselves are trended, the difference between them is constant. It is possible to regard these variables as defining a long-run equilibrium relationship, as the difference between them is stationary (Dickey, 1991). The Johansen's framework provides a number of co-integrating equations and estimates of all co-integrating vectors in the multivariate cases. The likelihood ratios test was conducted to establish the number of co-integrating relations in each of the equations. The Johansen test for co-integration on all the variables in the series with 1 to 2 lag intervals showed one co-integrating equation (See Table 2), allowing us to conclude that the combination of the included variables are co-integrated.

Table 2: Multivariate Johansen's Co-integration Test Result

Series: PSC, GRM, GRA, GRI.
Lags interval: 1 to 2

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.643417	61.92479	47.26	54.48	None **
0.353818	26.86456	29.64	35.66	At most 1
0.241056	12.01767	15.48	20.06	At most 2
0.074698	2.639515	3.75	6.69	At most 3

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 1 co-integrating equation(s) at 5% significance level
Normalized Co-integrating Coefficients: 1 Co-integrating Equation(s)

APC	GRM	GRA	GRI	C
1.000000	-0.001095	-115.1356	1.468999	-1.828990
	(0.00968)	(59.5715)	(0.87134)	
Log likelihood	-147.5456			

Source: E-views Econometrics 5.0

The nature of the established long-run relationship can be explained using the normalized co-integrating equation, thus: APC = -0.001093GRM + (-115.1352GRA) + 1.468999GRI + (-1.828987) Therefore, the values from the normalized co-integration equation reveal that there is a long-run equilibrium relationship between private sector-led economy growth and banking institutions in Nigeria. The coefficient of the lagged error-correction term, however, is a short-run adjustment coefficient and represents the proportion by which the long-run disequilibrium in the dependent variable is being corrected in each short period (Brooks, 2008).

7. Vector Error Correction Model

The Error Correction coefficient contains information about whether the past values affect the current values of the variable under study. A significant coefficient implies that past equilibrium errors play a role in determining the current outcomes. The information obtained from the ECM is related to the speed of adjustment of the system towards long-run equilibrium and the short-run dynamics are captured through the individual coefficients of the difference terms.

Table 3: Vector Error Correction Estimates

Variables:	Coefficient	Std. Error	t-Statistic	Prob.
(ECM_{-1})	-0.921762	-0.423205	0.000771	-0.010008
D(APC(-1))	-0.155939	-1.064438	-0.000384	0.002548
D(APC(-2))	-0.490521	-3.865473	0.000163	0.008540
GRM (-1)	-0.001093	-0.98673	0.319891	0.18297
GRA(-2)	-101.1352	-0.611899	-2.72E-07	0.000245
GRI(-3)	-1.326999	-0.641147	-5.58E-07	0.000335
C	-1.758987	-2.20139	-1.48661	
R-squared	0.840293	Mean dependent var		-20957.83
Adj. R-squared	0.830312	S.D. dependent var		1555884.
S.E. of regression	640919.2	Akaike Info. Criterion		29.66101
F-statistic	1.31E+.2	Schwarz criterion		29.79433
Log likelihood	-516.0677	Durbin-Watson Stat.		1.883600
Prob.(F-statistics)	1.870453			

Source: E-views Econometrics 5.0

Table 3 also shows the adjustment coefficient on *ECM* in equation (3) is negative and statistically significant at 1% level of significance indicating that, when deviating from the long-run equilibrium, error correction term has an opposite adjustment effect and the deviation degree is reduced. The significant error term also supports the existence of long-run relationship between private sector-led economy growth and banking institutions. The error-correction coefficient is statistically significant and has a negative sign, which confirms that there isn't any problem in the long-run equilibrium relationship between the independent and dependent variables.

Thus, the error correction coefficient (-0.921762) which measures the speed of adjustment towards long-run equilibrium indicates a feed back of about 92% of the previous year's disequilibrium from the long-run elasticity of banking institutions. This also implies that the speed with which growth rate of manufacturing sector, growth rate of agriculture sector and growth rate of industrial sector adjust from short-run disequilibrium to changes in banking institutions in order to attain long-run equilibrium is 92% within one year. The coefficient of determination (R^2 = 0.8431245) indicates that about 84% of the variations in banking institutions is explained by changes in private sector-led economy growth variables (GRM, GRA, GRI) in Nigeria. This implies that a good portion of banking institutions trends in Nigeria is explained by Private sector-led economy growth variables. The F-Statistics of 6.764345 which is significant at 5% confirms the

impact of private sector-led economy growth on banking institutions. Further more, the influence of the explanatory variables on the dependent variable is statistically significant and this is also confirmed by the F-probability which is statistically zero and finally, the value of Durbin–Watson (DW) shows the absence of autocorrelation.

8. Causality Test

Table 4: Result of Pairwise Granger-Causality Test (1989-2013) with 2-period Lag length

Null Hypothesis:	Obs	F-Statistic	Probability	Decision
GRM does not Granger Cause APC	23	0.53341	0.59209	No causality
APC does not Granger Cause GRM		0.26105	0.77100	No causality
GRA does not Granger Cause APC	23	0.71194	0.49881	No causality
APC does not Granger Cause GRA		0.70791	0.50074	No causality
GRI does not Granger Cause APC	23	0.65778	0.52533	No causality
APC does not Granger Cause GRI		0.19534	0.82362	No causality
GRA does not Granger Cause GRI	23	8.10562	0.00154	Causality
GRI does not Granger Cause GRA		3.43103	0.04552	Causality
GRM does not Granger Cause GRI	23	0.12642	0.88174	No causality
GRI does not Granger Cause GRM		0.02083	0.97943	No causality
GRI does not Granger Cause GRM	23	0.22949	0.79634	No causality
GRM does not Granger Cause GRI		0.05048	0.95088	No causality

Note: The decision rule of a causality test states that if the probability value of the estimate is higher than the 5 percent (or 0.05) level of significance, we accept the null hypothesis, and vice versa

Source: E-views Econometrics 5.0

To determine the direction of causality between the variables, the Engle and Granger (1987) causality test was performed on the variables as indicated in table 4. The Granger causality investigated the predictive content of one variable beyond that inherent in the explanatory variables itself. The results of the Granger causality test indicate that aggregate private sector credit (APC) has no causality with GRM (growth rate of manufacturing sector), GRI (growth rate of industrial sector) and GRA (growth of agricultural sector). This means that there is no causality between private sector-led economy growth variables and banking institutions in Nigeria. The results also show that growth rate of agricultural sector has bi-directional causality with growth rate of industrial sector and this implies that growth in the manufacturing sector of the private sector-led economy can have important implication for growth in industrial sector in Nigeria and verse versa.

9. Conclusion and Recommendations

Banking institutions in the country are patterned to play special role of financial intermediation to ensure that funds get to the private sector (investors) of the economy sufficiently that will enhance economic growth and development. Hence the study reveals that the variables are integrated in the order 1(1).There is also a long-run equilibrium relationship between banking institutions and private sector-led economy growth and the result also confirms about 92% short-run adjustment speed from long-run disequilibrium. There is no causality between private sector-led economy growths and banking institutions, but growth rate of manufacturing sector and growth rate of industrial sector granger causes each other. The coefficient of determination indicates that about 84% of the variations in banking institutions are explained by changes in private sector-led economy growth variables in Nigeria. Therefore, the study recommends that the financial

institutions should maintain a high degree of integrity and honesty in their dealing and this will bring trust and good relationship between the operators and the beneficiaries. An improved and sustainable legal framework should be put in place by Government to discourage the importation of sub-standard products at the expenses of local manufacturers and effective training programs should be encouraged for the private sector-led economy this will educate and improve investors on existing business opportunities.

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Appendix 1: Private Sector-led economy Growth and Banking Institutions in Nigeria (1989 to 2013.)

Year	Private sector credits (APC) %	Growth Rate of Manufacturing Sector. (GRM) %	Growth Rate of Agric. Sector. (GRA)%	Growth Rate of Industrial Sector. (GRI)%
1989	3.0	0.1	5.2	9.9
1990	4.6	1.1	7.1	7.2
1991	6.1	8.2	8.0	8.2
1992	2.6	1.1	0.1	4.7
1993	9.0	5.5	5.0	2.9
1994	9.0	6.1	4.9	2.2
1995	2.3	7.5	9.5	0.1
1996	6.8	5.2	6.6	2.5
1997	8.2	2.3	7.8	4.3
1998	0.9	8.4	4.6	2.7
1999	6.8	4.4	2.4	1.8
2000	7.3	7.5	5.6	1.1
2001	0.9	0.4	2.9	5.4
2002	4.8	9.2	4.8	3.1
2003	2.6	7.1	6.7	1.5
2004	9.5	6.1	2.6	3.3
2005	6.8	0.6	5.5	5.4
2006	6.1	0.9	0.9	6.2
2007	6.0	4.0	0.6	6.4
2008	7.3	4.8	6.5	6.0
2009	4.5	2.5	9.2	6.1
2010	1.7	9.8	4.2	7.8
2011	0.4	5.5	7.8	8.8
2012	2.4	0.5	9.5	7.3
2013	8.4	8.6	7.8	6.6

Sources: (i). CBN Statistical Bulletin (Various issues), (ii). National Bureau of Statistics (Various issues)